CLAIMS

1. A remote education system that enables education over
distances using multimedia bi-directional communication,
5   including video and audio, comprising:

student video acquisition means for acquiring video of
the student;

facial image matching means for matching the video
acquired by the student video acquisition means with a
10 preregistered facial image of the student;

action request means for requesting the student to
perform an action; and

action detection means for detecting the action performed
by the student on the basis of image changes in the video of
15 the student acquired by the student video acquisition means,
thereby providing the system with a function for confirming
that the legitimate student is in attendance.

2. The remote education system according to claim 1,
wherein
20   the action request means includes a function for
requesting that the student moves the position of his or her
face, and

the action detection means includes a function for
detecting whether the position of the face of the student has
25 moved.

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3. The remote education system according to claim 1 or 2, wherein

the action request means includes a function for asking the student a question and requesting an audio response, and

5   the action detection means includes:

a function for acquiring audio of the student;

a function for recognizing the audio response from the acquired audio;

a function for determining the validity of the 10 audio response of the student from the recognized audio response; and

a function for detecting movement of the mouth of the student accompanying the audio response by the student.

4. The remote education system according to claim 3, 15 wherein

the action detection means includes a function for matching the audio response of the student with preregistered audio of the student.

5. The remote education system according to claim 3 or 4, 20 wherein

the action request means includes a function for asking the student a question relating to time and requesting an audio response, and

the action detection means includes a function for 25 determining the validity of the time given in response by the

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student.

6. The remote education system according to any one of claims 3 to 5, wherein

the action request means includes a function for asking a question relating to personal information of the student and requesting an audio response, and

the action detection means includes a function for matching the personal information given in response by the student with preregistered personal information relating to that student.

7. The remote education system according to any one of claims 1 to 6, wherein

the action detection means includes a function for determining that the facial image of the student does not move in a discontinuous manner.

8. The remote education system according to any one of claims 1 to 7, wherein

the action detection means has a function for determining whether image changes occur within a specified time of the action request means requesting the student to perform an action.

9. The remote education system according to any one of claims 1 to 8, wherein

the action request means has a function for using unpredictable timing when requesting the student to perform an

action.

10. The remote education system according to any one of claims 1 to 8, wherein

the action request means has a function for requesting the student to perform an action based on a command by the lecturer.

11. An attendance confirmation method of confirming whether a legitimate student is in attendance in a remote education setting, comprising the steps of:

acquiring video of the student;

matching the acquired video with a preregistered facial image of the student;

requesting the student to perform an action; and

detecting the action by the student on the basis of image changes in the acquired video.

12. The attendance confirmation method according to claim 11, wherein

the step of requesting an action includes a step of requesting the student to move the position of his or her face, and

the step of detecting the action includes a step of detecting whether the position of the face of the student has moved.

13. The attendance confirmation method according to claim 11 or 12, wherein

the step of requesting an action includes a step of asking the student a question and requesting an audio response, and

the step of detecting the action includes:

5   a step of acquiring audio of the student;

a step of performing recognition of the audio response from the acquired audio;

a step of determining the validity of the audio response of the student from the recognized audio response;

10   and

a step of detecting movement of the mouth of the student accompanying the audio response of the student.

14. The attendance confirmation method according to claim 13, wherein

15   the step of detecting the action includes a step of matching the audio response of the student with preregistered audio of the student.

15. The attendance confirmation method according to claim 13 or 14, wherein

20   the step of requesting an action includes a step of asking the student a question relating to time and requesting an audio response, and

the step of detecting the action includes a step of determining the validity of the time given in response by the

25   student.

16. The attendance confirmation method according to any one of claims 13 to 15, wherein

the step of requesting an action includes a step of asking a question relating to personal information of the student and requesting an audio response, and

the step of detecting the action includes a step of matching the personal information given in response by the student with preregistered personal information relating to that student.

17. The attendance confirmation method according to any one of claims 11 to 16, wherein

the step of detecting the action includes a step of determining that the facial image of the student does not move in a discontinuous manner.

18. The attendance confirmation method according to any one of claims 11 to 17, wherein

the step of detecting the action has a step of determining whether image changes occur within a specified time from requesting the student to perform an action by the step of requesting an action.

19. The attendance confirmation method according to any one of claims 11 to 18, wherein

the step of requesting an action uses unpredictable timing when requesting the student to perform an action.

20. The attendance confirmation method according to any

one of claims 11 to 18, wherein

the step of requesting an action requests the student to perform an action, based on a command by the lecturer.

21. An attendance confirmation program for executing, on a computer, the attendance confirmation method according to any one of claims 11 to 20.